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## Patent Specification

## ➤ Abstract

## Abstract

The present invention relates to the operation method of the CDMA basestation system, particularly, to the method of renovating loaded data of a program between the base station manager (BSM) according to the soft handoff performance and the base station controller (BSC). As to the method of renovating loaded data of a program of the CDMA basestation system equipped with the base station manager (BSM) and base station controller (BSC), in case this the present invention has the response according to the programmable load data renewal pass in response to the selection of the destination base station controller which the programmable load data change teeth is required in the base station manager and the first process, transmitting programmable load data changed to the selected destination base station controller as described above and programmable load data electrical transmission from the destination base station controller, after it deletes stored and changed programmable load data after the second process, transmitting the changed programmable load data as described above with the subbase station controller and time out according to the electrical transmission of the subbase station controller, this the present invention does to a feature to perform the third process renewing changed programmable load data.

## ➤ Representative Drawing

Drawing 2

## Index Term

The CDMA, PLD, neighbor list, mobile telephone system.

## ➤ Specification

## Title of Invention

METHOD FOR MANAGING PROGRAM LOAD DATA IN CDMA BASESTATIONTRANCEIVER SYSTEM(METHOD FOR MANAGING PROGRAM LOAD DATA IN CDMA BASESTATIONTRANCEIVER SYSTEM)

## Brief Description of Drawings



Figure 1 is a drawing showing the update operation run state of PLD of the BSM PLD management block in the CDMA basestation system according to prior art.

Figure 2 is a drawing showing fig. 2 is the update operation flow of neighbor list related data between the changed BSM according to a preferred embodiment of the present invention and CCP.

## The Detailed Description of Invention

### The Purpose of Invention

#### Field of Invention and the Prior Art

The present invention relates to the operation method of the CDMA basestation system, particularly, to the method of renovating loaded data of a program between the base station manager (BSM) according to the soft handoff performance and the base station controller (BSC).

The PCS (Personal Communication Service System) is a kind of the digital mobile communications system as it is widely known. For the operation of the PCS system, the shape of the base station (Base Station Transceiver System: BTS) and base station controller (Base Station Controller: BSC) and operational data is needed. As data which that data has to refer among the operation of each processors, BCP which is the main processor of BTS and the CCP (Call Control Processor) that is the main processor of BSC is loaded to the memory area and base station manager (Base Station Manager: BSM) are managed to the hard disk (HDD). Generally this kind of data is called at the programmable load data (Program Loaded Data: PLD). As to each characteristic of using in a system, PLD is made of required parameters, and environment data and other data required for the configuration management of a system.

And concretely if PLD looks into this kind to each exist with BSM, CCP, and BCP, it is the same as that of the next time.

The p bsm, which is the BSM PLD the p ccpxx which is the CCP PLD, and the p bcpxyy which is the BCP PLD are in BSM. And the p ccpxx in CCP, and the p bcpxyy exists and the p bcpxyy exists in BCP. At this time, in the p ccpxx, a yy means the corresponding BTS id the high position BSC id of the corresponding BTS to be the BSC id of the corresponding CCP to a xx mean and a xx and yy mean in the p bcpxyy. That is, as to PLD of the BSC 1 burn, in the BTS PLD which means the tenth BTS of the BSC burn low rank while the p ccp02 is, the p bcp0210 is. In this case, the case of outputting the corresponding information among this PLD information silver operation with the need of an administrator or changing occurs. And what is necessary is the PLD management block of the PCS system.

Particularly, as to the many-sidedness of PLD, PLD for the soft handoff in which it becomes the important property of the CDMA system is neighbor list related data. Generally, in the CDMA system it says to be the soft handoff, at the same time, the function of maintaining two base stations and the speech path is called. For the performance of the soft handoff, the neighbor list and different data related to the neighbor list are needed as the neighbor list for a hand-off. But data does not have a related but a related has a related one base station or the control station with data of on characteristic all base stations of the data. As to this, it means at the same time, that the Imperatae Rhizoma base station has the same information toward all base stations of a neighboring. If it looks through the example of a before, the information about BTS to not only the information about 0~47 BTS of 0 burn BSC low rank but also the other 48~576 burn is moreover necessary for the p ccp00 burn PLD. Like this, all base station controllers have the information toward the Imperatae Rhizoma base station of 576 from 0 burn BSC to 11 burn BSC in common. Hereinafter, it relates to the efficient administration of data had in common like moreover describing in the above with the present invention explained.

In conclusion, the price which is identical between all BSCs has to be maintained. It has to be so between and, the high position BSM and low rank BSC. For this, as to the renewal of PLD, the BSM PLD management block performs the performance of the update operation as follows.

This operation state is illustrated as to the attached operation flow of fig. 1. And it looks into the corresponding operation through this reference.

Firstly, in 110 step, the destination base station for adding the neighbor list or to deleting is selected and the mouth FUR value is put. And in 112 step, it does the changed content with the pack (pack) and it transmits to the BSM PLD management block with all BSCs. That is, the BSM PLD management block transmits the content of the changed neighbor list with all BSCs corresponding to. And then, BSC receiving the transmitted information as described above renews its own PLD. It determines the of which success in 114 step. The response of the success is again transmitted with BSM in case of succeeding. And then, in 116 step, the BSM PLD management block determines from BSC whether it has the pass message receipt of the PLD renewal. Its own PLD is renewed in that case, and 118 step. In case the CCP PLD renewal was failed, the BSM PLD, moreover, a renewal is not performed and the operation of 117 step is performed. And it stores and processes about BSC in which the PLD renewal fails to the previous historical file. According to this BSM and BSC PLD update operation, PLD of the low rank and high position has the value which is same at all times.

And the renewal of data which additionally relates to the neighbor list is with the operation described in the above. Before, as it mentions, because common values become as to data, relating to the neighbor list, all BSCs have to have identically the value faced this boy. Therefore, all BSC of the corresponding BSM low ranks altogether renew neighbor list related data when an operator renews data of the neighbor list about the specific base station. After a , moreover, firstly, the BSM PLD management block transmits neighbor list data changed to all BSCs of the low rank, it waits for the response about the result about each BSC. But neighbor list related data has the characteristic that the size is very big and it all is unable to send the corresponding information to the low rank BSC in a transmission about one BSC at a time and it many times divides and transmits the information. This means that it waits that the management block of the BSM PLD divides data per one BSC and it many times transmits, this is big with the response according to a that, moreover, the number of transmission bay. In case data about the neighbor list changed about BSC of a dozen with each BSC per is many times divided and it transmits, BSM will transmit the message of the several tens burn. And the transmitted response according to a message has to be waited for.

The conventional neighbor list data transmission system as described above provides a problem as follows.

Firstly, when a communications between BSC and BSM are interrupted or the problem that does not expect happens and it does not answer to the low rank BSC to the high position, BSM without rhyme or reason waits for a result about low rank all BSCs because of knowing the state of the low rank BSC. Therefore, the problem with an increased load of a system BSM has to accomplish operation the long time than the corresponding task time limit the neighbor list is produced. In conclusion, this problem is caused by this problem causes the down phenomenon of the message window performing an interfacing with an operator.

#### Technical Problems to be solved by the Invention

Therefore, the object of the present invention takes the method of renovating loaded data of a program in which the programmable load data renewal between the base station manager (BSM) according to the soft handoff performance and the base station controller (BSC) is more made in an efficiency the faster running time, it has.

As to the method of renovating loaded data of a program of the CDMA basestation system including the base station manager (BSM) and base station controller (BSC) for this object achieving, in case it has the response according to the programmable load data renewal pass in response to the selection of the destination base station controller which the programmable load data change teeth is required in the base station manager and the first process, transmitting programmable load data changed to the selected destination base station controller as described above and programmable load data electrical transmission from the destination base station controller, after stored and changed programmable load data is deleted after the second process, transmitting the changed programmable load data as described above with the subbase station controller and time out according to the electrical transmission of the subbase station controller, it is done by a feature to perform the third process renewing changed programmable load data.

### The Structure and Function of the Invention(Device)

The desirable embodiment of below the present invention is circumstantially illustrated with reference to drawings attached. Firstly, in case of showing the element similar even though it is the reference numeral which in describing the present invention, is indicated through the reference numeral added in the elements of each drawing on the other drawing, the same reference numeral is used, it has to note.

Moreover, in below description, many specific matters including the configuration element of the concrete circuit etc. are shown up. In order to this help the understanding of being more overall of the present invention, it is provided but the present invention can be performed without such specified items, it is obvious to a person skilled in the art, it will do. And in describing the present invention, in case the concrete description to the notification function relating or the configuration is a gist of the present invention determined because of being gratuitously cloudy, the detailed description is omitted.

In the present invention, in order to have the feature supplementing BSM and CCP PLD update operation to the solution of the problem according to the conventional neighbor list renewal which before illustrates it is processed.

As to an ordinarily, the feature attaching great importance to the homeostasis of the top-for bottom PLD has the update operation of the BSC PLD and BSM PLD. But the problem of the renewal failure according to prior art can be generated due to such feature as if it before illustrated.



That is, in the conventional technology, after the content that the BSM PLD management block receiving the PLD change command from an operator for the homeostasis described in the above has to change is transmitted with all low rank BSCs, in case the result of waiting for the result about the PLD renewal and being again received from all BSCs of the low rank is the pass, it is limited and its own PLD is renewed. The generation of the mentioned problems as described above is not canceled.

The data size has the characteristic of being very big in case of the arrangement lower-part, and neighbor list related data needing for the soft handoff at the CDMA system to the other PLD information. The renewal running time is excessive, the characteristic cannot help increasing to the preexistence PLD update operation as the state illustrated in Figure 1. Caused the down phenomenon of the message window which sometimes provided an interfacing with an operator while it became the factor dropping down the efficiency of BSM to be caused by. And it became the big factor which in conclusion, was the reliability of a system decreased, in the above case, it moreover lit up this.

In the present invention for this problem solution, if prior the PLD renewal of the destination location in fact BSC was successful, the information that the PLD renewal failed is reported from the neighboring BSC. And yet, BSM renews its own all CCP PLDs between each BSC for the PLD homeostasis between the homeostasis of PLD and BSC and BSM.

Thus, the PLD renewal result is received about BSC having the destination base station for adding the neighbor base station for a hand-off in the neighbor list related data update or to deleting.

As to the renewal of you beaver list, while defining the new update operation between BSC and BSM and enhancing the efficiency of the BSM system use to the little faster performance ability, it prevents the down phenomenon of the message window and the operation of that the present invention will be able to be comprised the implementation of the system having with reliability.

As described in detail, it is the same as that of the next time with reference to fig. 2 which is the relief operation of below the present invention attached. Figure 2 shows the operation flow which the gang of neighbor list related data is long between the changed BSM according to a preferred embodiment of the present invention and CCP. And as to fig. 2, BSM will have a related with the BSC PLD update operation, it be natural to feel with BSM, an operation of the present invention will.

If the operation of the present invention is illustrated with reference to fig. 2, firstly an operator chooses the base station for adding the neighbor list or to deleting in 210 step and the neighbor list updating performs. Even in this case, since the destination base station being selected and putting the input value, the corresponding operation performance is made over. The operation of 210 step is finished. The BSM PLD management block performs the electrical transmission of the information changed to BSC having the destination base station for being the price which an operator inputs with the pack (pack) and to changing the neighbor list in 212 step. If the transmission operation of 212 step is completed, it determines in 214 step whether the renewal pass message receipt of PLD is successfully performed in response to the electrical transmission from the corresponding BSC. In 214 step, in case it has the reception of the success message, the electrical transmission of the information changed in 216 step to the neighboring BSC is performed. And the BSM management block renews its own PLD regardless of the PLD renewal result from the neighboring BSC. At this time, as to BSC of the low rank, because oneself is unable to know whether oneself is the destination location BSC or not whether it is the neighboring BSC, or not oneself transmits the PLD renewal success about the message which oneself receives with BSM. Since this information becomes the irrelative information to the BSM PLD management block, it does not take the information and this information like that puts. This is generated the phenomenon that the corresponding information is accumulated in Q of BSM. Therefore, in the present invention, if the BSM PLD management block altogether sends the changed neighbour information in 216 step to the neighboring BSC, after the predetermined time is waited for in 218 step, the content of Q in which the information which at the lower part puts on in order to enhance the effectiveness of the BSM resources from 220 step and sends is acquired is deleted. And in 222 step, PLD of BSM is updated.

#### Effect of Invention (Device)

Therefore, an operation of the present invention has the advantage that as to the renewal of the neighbor list between BSM and BSC, an efficiency the faster running time can be obtained. This has the effect that an operation of the present invention enhances the utilization ratio of the BSM system and this means a zoom. And as to the operator interfacing through an operation of the present invention, it moreover has with advantage prevents the down phenomenon of the message window.

#### Scope of Claim(s)

##### Claim [1]

The method of renovating loaded data of a program of the method of renovating loaded data of a program of the CDMA basestation system equipped with the base station manager (BSM) and base station controller (BSC), wherein: it is made of the selection of the destination base station controller, the first process transmitting programmable load data changed to the selected destination base station controller as described above, the second process, and the third process: the selection of the destination base station controller the programmable load data change teeth is required in the base station manager; the second process has the response according to the programmable load data renewal pass in response to the programmable load data electrical transmission from the destination base station controller; and transmits the changed programmable load data as described above with the subbase station controller; and the third process deletes changed programmable load data which is stored according to the programmable load data electrical transmission of the subbase station controller after the time out; and renews changed programmable load data.

##### Claim [2]

The method of renovating loaded data of a program for having related data as a feature of claim 1, wherein programmable load data which changed is processed with the electrical transmission relates to the neighbor list data, according to the soft handoff performance and neighbor list and it is determined.

#### Drawing

##### Drawing(s)

Drawing1

